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REMARKS

Response to Office Communication of February 23, 2004

In the Office Communication issued February 23, 2004, it is alleged that Applicants' prior Reply filed November 24, 2003, was non-responsive because it did not fulfill the drawing requirement. Specifically, it is asserted that a fractionation plant was not shown. This is incorrect. As Applicants' indicated in the Reply of November 24, 2003, under the heading entitled "Drawings" on page 7, Figure 7 represents a fractionation plant. As shown in the proposed Figure 7, the fractionation plant comprises a fractionation column 16 and a principle heat exchanger 50.

It is further argued that the newly proposed drawing numbers should have been inserted into the specification. Applicants intended to insert the reference numbers into the specification, but were awaiting indication from the Examiner that the proposed drawing corrections were acceptable.

In any event, by the above amendments in the specification, Applicants have inserted the proposed reference numbers into the specification. In addition, Applicants have moved the text from page 5a to the bottom of page 4 which appears to be a more appropriate location for the brief description of Figures 3-5. In addition, Applicants have included a brief description of newly proposed Figures 6 and 7.

The following Remarks correspond to the Remarks presented in the Reply of November 24, 2003.

Amendments to the Claims

Claims 2, 4, and 9 are amended to make minor clerical changes. These amendments do not narrow the scope of the claims. Claims 18-24 are directed to further aspects of applicants' claimed invention and are supported throughout the disclosure. See, e.g., the original claims, page 3, lines 9-14, page 3, lines 33-38, page 5, lines 1-5, and page 5, lines 11-32.

Drawings

Enclosed herewith are proposed drawing changes which show feed lines 14, pipe(s) 13, fractionation plant (Fig. 7), fractionation column 16, principal heat exchanger 15, and eight and ten heat exchanger blocks in two rows (Fig. 6). The original drawings already showed insulating vessel 11 and discharge lines 12. Approval of the drawing corrections is respectfully requested. Upon approval, applicants will amend the specification to insert references to the revised drawings.

Rejection under 35 USC §112, second paragraph

In the rejection it is asserted that "The recitation of 'a heat exchanger' is indefinite since 'a heat exchanger' has previously been claimed and it is unclear if applicant is claiming an additional heat exchanger or failed to provide proper antecedence." It is unclear what is intended by this assertion, nor is it clear how it is applicable to claim 9.

Claim 9 is clearly directed to a low-temperature air fractionation plant which comprises a principal heat exchanger and at least one fractionation column. The principal heat exchanger is further defined as a heat exchanger according to Claim 1. One of ordinary skill in the art can readily understand the literal scope of this claim. Nothing more is required under the statute. The phrase "a heat exchanger" is not indefinite in the context of claim 9, just as it is not indefinite in, for example, the preambles of claims 2-8, 10-11, and 15-17.

Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC §102 in view of Walter et al.

Claims 1-3 and 6-10 are rejected as allegedly being anticipated in view of the disclosure of Walter et al. (WO 99/11990). This rejection is again respectfully traversed.

At the outset, applicants wish to strongly reiterate that the anticipation rejection is improper on its face as the Examiner has failed to show where the Walter et al. disclosure describes each and every element of the claims.

To establish anticipation, the anticipation rejection must identify where each any every element of the claimed invention is disclosed by the asserted anticipatory prior art reference.

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This is particularly necessary when, as in the instant case, the allegedly anticipatory reference is not in English, but is in German. For this failure alone, the anticipation rejection should be withdrawn. See, e.g., *Ex part Levy*, 17 USPQ 2d 1461, 1462 (BOPA 1990):

The factual determination of anticipation requires the disclosure in a single reference of every element of the claimed invention. ... **Moreover, it is incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.** (emphasis added)

The rejection does not show where the disclosure of Walter et al. describes all of the elements of applicants' independent claim 1, let alone the further features recited in dependent claims 2, 3, and 6-10. For example, Walter et al. fails to disclose or suggest means for securing that permit thermally produced changes in the lengths of pipes to be compensated for by movement of the heat exchanger block; a lower end of a heat exchanger block which can move in at least two spatial directions; a heat exchanger block that is suspended in such a manner that it can move freely above its center of gravity; securing means having joints; securing means that have two axes of rotation which lie perpendicular to one another; and/or a securing means that has a first element fixedly connected to the heat exchanger block, and a second element which is articulately connected to the first element and articulately secured in an insulating vessel.

Merely referring to the two figures and certain pages of text does not indicate which disclosed elements of the Walter et al system are being relied on as describing each of the elements of applicants' claims. Furthermore, if the Examiner is going to rely on particular foreign language text, the Examiner should provide a translation thereof.

Further, the rejection has now been expanded to include claim 7. Yet, no details are given as where the reference discloses any of the features of any of the dependent claims, let alone claim 7.

In the Office Action at page 5, the Examiner does identify some of the elements of Walter et al. that are being relied on in the rejection. Specifically, it is stated that heat exchanger of Walter et al. is identified by reference number 17 and it is alleged that this heat exchanger is "moveable via moveable ropes (25,40,41), straps (37) and bearings 27."

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Firstly, this assertion clearly does not identify all of the features recited in independent claim 1, nor any of the additional features recited in dependent claims 2, 3 and 6-10. Secondly, this assertion provides no explanation as to why the features that are used to secure the heat exchanger of Walter et al. provide the heat exchanger with the ability to move. Nor does it explain why the so-called ropes and straps are "moveable."

Walter et al. disclose a heat exchanger 17 which as shown in figure 2 is fixed to the insulation wall 18 by clamps 50 and roped shaped elements 40, 41. Further, it is held by mounting brackets 37. There is no explanation in the rejection as to how the heat exchanger 17 is arranged moveably. These above-mentioned elements are used to secure the heat exchanger 17 so that it is arranged at a particular angle (3-10°). The heat exchanger is held at this particular angle in order to reduce the amount of cold required. Nothing within the rejection provides any suggestion that Walter et al. disclose that the heat exchanger is moveably arranged with the cold box. In fact, providing the heat exchanger with moveability would be contrary to the intent of maintaining the heat exchanger at a certain angle.

In view of the above remarks, withdrawal of the rejection is respectfully requested.

Rejection under 35 USC §103 in view of Walter et al. and Thompson et al.

Claims 3-5 and 10-16 are rejected as allegedly being obvious in view of Walter et al. in combination with Thompson et al. (US 5,131,459). This rejection is respectfully traversed.

The disclosure of Walter et al. is discussed above. Applicants' disagree with the allegation that Walter et al. discloses all of the features of applicants' claimed invention other than plural heat exchangers and a common connecting line. See the above discussion in the anticipation rejection. For example, Walter et al. do not disclose or suggest a means for securing a heat exchanger block that permits thermally produced changes in the lengths of pipes to be compensated for by movement of the heat exchanger block; a lower end of a heat exchanger block which can move in at least two spatial directions; a heat exchanger block that is suspended in such a manner that it can move freely above its center of gravity; or securing means permitting

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two axes of rotation.

US '459 disclose a heat exchanger assembly which is to be positioned within a duct through which heated gases flow, e.g., for use in heat recovery steam generation. The heat exchanger assembly comprises a series of heat exchanger tube panels (not blocks), each panel including an upper and lower pipe header. Also, each panel is attached to a hanger which supports the tube panel and a mechanism is provided which attaches the hanger to a structural support member. These mechanisms permit the tube panels to be moved for maintenance purposes. **However, when in operation the tube panels are maintained in a fixed position.** See the Abstract and Column 1, line 52-column 2, line 3.

As described in US '459, when a maintenance worker needs access to a tube panel, the pipe connection to the upper and lower headers are first severed and then a jack 50 is used to raise and lower the tube panel. See, e.g., column 3, lines 61-67. Then, when maintenance is complete, the tube panels are reattached to the interconnecting pipes. See column 5, lines 17-20.

Thus, US' 459 does not disclose or suggest heat exchanger blocks that are moveably arranged within an insulation vessel as recited in applicants' claims. For example, as discussed above, the tube panels of US '459 are fixed during operation and are **severed** from the connecting pipes which bring water to the headers during maintenance, that is, when the tube panels are moveable by the disclosed jacks. **Thus, the tube panels are not moveable so as to compensate for thermally produced changes in the lengths of pipes connected to the tube panels.**

Furthermore, US '459 only disclose vertical movement of the tube bundles during maintenance by way of jack 50. Thus, US '459 does not disclose a heat exchanger block having a lower end which can move in at least two spatial directions. Nor does US '459 does disclose a heat exchanger block that is suspended in such a manner that it can move freely above its center of gravity. Further, US '459 does not disclose securing means permitting two axes of rotation for the heat exchanger.

Thus, even if one were to combine the disclosures of Walter et al. and US '459, the resultant combination would neither describe nor suggest a means for securing a heat exchanger block that permits thermally produced changes in the lengths of pipes to be compensated for by

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movement of the heat exchanger block; a lower end of a heat exchanger block which can move in at least two spatial directions; a heat exchanger block that is suspended in such a manner that it can move freely above its center of gravity; and/or securing means permitting two axes of rotation.

In the rejection it is asserted that it would be obvious to modify the heat exchanger of Walter et al. so as to moveable to provide for repair and inspection in view of the disclosure of Thompson et al. However, there is nothing to suggest that moveability of the heat exchanger of Walter et al. is needed for repair or inspection. Further, in light of the securing means of Walter et al. (clamps 50, roped shaped elements 40, 41, and mounting brackets 37) and the specific angle of inclination, there is no motivation that would lead one to look to the disclosure of Thompson et al., with its vertical moveability for repair/inspection, to modify the disclosure of Walter et al.

In view of the above remarks, it is respectfully submitted that the disclosure of Walter et al, taking alone or in combination with the disclosure of Thompson et al, fails to render obvious Applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC §103 in view of Walter et al.

Claim 17 is rejected as allegedly being obvious in view of Walter et al. (WO '990). This rejection is respectfully traversed.

In the rejection it is alleged that a triangular shape for plate (37) is an obvious design choice, without any explanation. This unsupported assertion merely emphasizes the fact that the prior art fails to disclose each of the elements of the claimed invention.

In addition, this assertion completely fails to address the other features associated with the triangular shape plate for the second element of the securing means, such as the first element which is fixedly connected to the heat exchanger block and comprises two plates secured to two opposites side of the heat exchanger block, and the second element, i.e., the triangular shape plate, being articulately connected to the first element and being articulately secured in the insulating vessel. The triangular shape of the second element is not a mere obvious design choice but is a shape which facilitates its articulate connection to the first element and its

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articulate connection to the insulating vessel whereby desired movement can be achieved.

As securing means of Walter et al. uses clamps 50, roped shaped elements 40, 41, and mounting brackets 37. Nowhere does the rejection suggest any motivation for making any of these structures as a triangular plate. Further, as noted above, the heat exchanger of Walter et al. has a specific angle inclination. Nothing in the rejection suggests any motivation for the use of a securing means in the form of a triangular plate so as to provide such an inclination.

Moreover, the rejection presents no rationale as to why one would modify the heat exchange arrangement disclosed by Walter et al. so as to provide a securing means having a first element, fixedly connected to the heat exchanger block, and a second element, which is articulately connected to the first element, in which the second element is articulately secured in an insulating vessel. As described above, Walter et al. disclose a heat exchanger 17 which is secured by rope shaped elements 40 and 41 and mounting brackets 37. Nothing suggests modifying these securing means to be in the shape of a triangular plate. Nor is there any suggestion of securing a heat exchanger by means of a triangular shaped second element in accordance with applicants' claim 17.

In view of the above remarks, withdrawal of the rejection under 35 USC §103 is respectfully requested.

Rejection under 35 USC §103 in view of the Jepson Preamble and Thompson et al.

Claims 1-16 are rejected as allegedly being obvious in view of the subject matter of Applicants' Jepson preamble taken in combination with Thompson et al. This rejection is also respectfully traversed.

As discussed above, Thompson et al. does not disclose or suggest heat exchanger blocks that are moveably arranged within an insulation vessel as recited in applicants' claims. For example, Thompson et al. neither describe nor suggest a means for securing a heat exchanger block that permits thermally produced changes in the lengths of pipes to be compensated for by movement of the heat exchanger block; a lower end of a heat exchanger block which can move in at least two spatial directions; a heat exchanger block that is suspended in such a manner that it can move freely above its center of gravity; securing means permitting two axes of rotation;


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securing means having joints; securing means that have two axes of rotation which lie perpendicular to one another; and/or a securing means that has a first element fixedly connected to the heat exchanger block, and a second element which is articulately connected to the first element and articulately secured in an insulating vessel.

It is respectfully submitted that the subject matter of Applicants' Jepson preamble, taking alone or in combination with the disclosure of Thompson et al., fails to render obvious Applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,


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